



RESEARCH ARTICLE

A study on problems and suggestions of chilli growers in Andhra Pradesh, India

Kantheti vysali^{1*} & Bishnu Priya Mishra²

¹Department of Agricultural Extension Education, Odisha University of Agriculture and Technology, Bhubaneswar-751 003, India

²Faculty of Department of Agricultural Extension Education, Odisha University of Agriculture and Technology, Bhubaneswar-751 003, India

*Email: vysalikantheti@gmail.com



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Abstract

Agriculture plays a vital role in developing countries like India. Chilli is a variable annual shrub with good culinary uses and commercial significance. The present study enlightened us on the problems faced by chilli growers in Andhra Pradesh and the suggestions expressed by them to mitigate the problems. An ex-post facto research design was adopted for the study. Two districts, Guntur and Prakasam, were selected for the study purposively as they cover the highest area in chilli cultivation. Two mandals were selected from each district purposively based on the highest area and from each mandal, 5 villages were selected. Thirteen respondents from each village were selected randomly. Thus, a total sample size of 260 was selected for the study. The data was collected in the personal interview method using a pre-tested, well-prepared interview schedule. The data was collected in different categories like ecological, input, economic, social, technical, market and personal problems. They were collected on a three-point continuum as extreme, moderate and least problem and scores of 3, 2 and 1 were given respectively. The items were ranked in each category based on the obtained mean scores. The study revealed that among all the different categories of problems, the respondents perceived market (2.538) and economic (2.430) problems as the major problems and suggested direct marketing (91.92 %) and better remunerative prices (86.92 %) as the best strategies to mitigate the problems and increase the yield of farmers. Thus, enhancing more returns to the chilli growers.

Keywords

chilli growers; commercial significance; agriculture; farming; market possibility

Introduction

Agriculture plays a vital role in developing countries like India. India is an agricultural nation since almost 70 % of its people make their living from farming, which is also their primary form of employment. One of the most significant commercial vegetables and spices in the world is chillies (*Capsicum annuum* L.). It is a member of the Solanaceae family. It has a significant role in human diets. Since it is used as a condiment regularly in one way or another, it is an essential item, particularly in Indian cuisine. Among all the spices consumed by each individual, the major share was occupied by dried chillies. They are also said to have the ability to decrease cholesterol and strengthen the immune system. A good crop of chilli can be raised on

red sandy and sandy loam soils as an irrigated crop, with copious amounts of organic manure and fertilizer application. Even though the demand for chilli is rising both domestically and internationally, the nation's current output and productivity of the spice only make up between one-fourth and one-third of what is needed. The output of chilli must be significantly boosted to meet public demand. The present study deals with the problems faced by chilli growers in cultivating chilli crops. Problems may be defined as the limiting factors that obstruct an individual or item from reaching its full capacity. These are the hindrances one encounters on the path of development. This study illuminated the major problems faced by the chilli growers in Andhra Pradesh. It helps to analyze and address the mentioned problems to increase the production and productivity of chilli to meet global demand. The study also illustrated the suggestions rendered by the chilli growers to mitigate the expressed problems.

A large number of the chilli farmers expressed high costs associated with hybrid seed, lack of quality seed availability among technical constraints, high labor wages among socio-economic constraints, more incidence of pests among biotic constraints, heavy rains and dry spells among abiotic constraints, lack of regulated markets among institutional constraints, more price fluctuation for the produce among marketing constraints, absence of storage facilities among infrastructure constraints and lack of quality inputs among supply constraints (1). Most of the chili growers indicated that major problems in the adoption of recommended chili production technologies were more labor costs, followed by high agricultural input costs, a lower market price of chili, a lack of training about recommended chili practices, not enough knowledge about insects and pests and interruptions in electricity. They also further added a few suggestions to resolve problems such as a favorable minimum support price, lower rates for agricultural inputs, timely provision of crop loans, on time agricultural information from extension officers (2). Important problems among chili farmers are higher labour costs, labour shortages during harvesting, and grading, non-remunerative prices while market glut, less knowledge regarding current market prices and inadequate knowledge about the correct quantity of insecticides. It was further highlighted that the crucial suggestions to resolve the problems were the fixation of minimum support prices by the government, mechanization, eliminating middlemen in marketing, establishing storage facilities and providing year-round irrigation facilities (3).

Inadequate finance, non-availability of high-breed varieties and increased cost of production are the major chili problems expressed by farmers, and it is also suggested that commercial banks and cooperative marketing societies adopt flexible lending policies for farmers (4). Most of the chili farmers indicated that power interruptions were a major problem, followed by labor unavailability, expensive plant protection chemicals, the need for more labour, chili drying over sand and outbreaks of pests and diseases (5). Ninety percent of the chili growers expressed a lack of technical knowledge as the most important constraint,

followed by a lack of financial help (6). A large portion of chili growers reported that the higher incidence of pests and diseases is a major problem, followed by high pesticide costs, a lack of fertilizer and pesticide availability and insufficient labor during the picking time. The major suggestions proposed by the chilli growers are the availability of pests and disease-resistant chilli varieties, followed by the availability of fertilizer and pesticide at a subsidized rate locally and labor availability during the picking time (7). Unpredictable price fluctuation of the chili produce is the primary concern among chili farmers. Other issues include inadequate knowledge of growing nurseries, lack of support price for chili, the low price paid at peak time, high expenses for hybrid seeds, more infestation of diseases, pests and labour shortage (8).

Previous studies reported that the main challenges faced by chili farmers in production are pests and disease occurrence, unavailability of modern irrigation facilities, improper use of fertilizer and pesticides, unavailability of appropriate weedicides, lack of availability of high-quality pesticides and lack of training for farmers. In contrast, the main challenges faced by chili farmers in marketing are commission agent fees that are unreasonable, improper weighting, price fluctuations, a lack of regulated markets in the vicinity of the village, and commission agents (9). Further studies regarding problems faced by chilli farmers stated that the majority of chilli farmers said lack of technical expertise, shortage of financial facilities, shortage of drying space, high cost and irregular fertilizer supply, high price for quality seed, Insect and pest infestations are among the production challenges, while the main marketing problems are lack of market intelligence, expensive transportation, high commission costs and inadequate storage facilities (10). A research study on constraints faced by chili farmers concluded that lack of a warehouse or godown for adequate storage was the main obstacle faced by chili growers, followed by a lack of knowledge about the market, difficulties in obtaining credit and lack of transportation facilities (11).

Furthermore, studies on problems perceived by chilli farmers revealed that the primary issues raised by chilli producers were a lack of appropriate marketing channels for selling their produce, fluctuating costs, pests, insects and disease occurrence, timely non-availability of seeds, insecticides and fertilizers, absence of transportation infrastructure, unawareness regarding the actual market price of chillies, inadequate grading facilities and lack of recent technical know-how regarding chili production (12). Studies done on problems faced by farmers in organic production concluded that drought-affected crops, a lack of appropriate extension services on time about organic technologies and the low price at which organic produce was sold were the main obstacles faced by organic farmers. The main recommendations for improvement included frequent and periodic farm visits, consulting services from Krishi Bhavan officials regarding diagnostics and obtaining a premium price for the yield produced using organic methods (13).

Research on constraints perceived by cotton farm-

ers reported that labor shortages, high seed costs, pest and disease outbreaks, involvement of middlemen in the marketing process, an ineffective marketing information system and erratic price fluctuations were the main problems faced by cotton farmers (14). Furthermore, studies on problems perceived by cotton growers showed that the most significant challenges faced by cotton growers were the high cost of inputs, variations in market rates, lack of seed availability at the appropriate time, labor shortages, more transportation costs, lack of on-time technical advice, high labor costs, lack of timely credits, complicated process of obtaining crop insurance and lack of market facilities. Cotton farmers' recommendations to overcome these problems include minimizing the cost of seeds and giving them timely technical assistance (15).

Materials and Methods

An ex-post facto design was adopted for the study. The study was conducted in Andhra Pradesh in 2021-22. The state was purposively selected as it has the highest area and production of the chilli crop in India, as well as for easy rapport as the investigator hails from the same state. Two districts Guntur and Prakasam, were purposively selected for the study as they occupy the first 2 places in the area of chilli cultivation. Two mandals from each district were selected purposively based on the highest area and from each mandal 5 villages were selected randomly for the study. From each village, 13 respondents were selected for the study randomly. Thus, a total of 260 respondents, 65 respondents from each mandal and 130 from each district constituted the sample. The data was collected in different categories like ecological, input, economic, social, technical, market and personal problems. They were collected in a three-point continuum as extreme, moderate and least problem and scores of 3, 2 and 1 were given, respectively. The overall score given by all the respondents was worked out to derive the mean score and based on the

obtained mean scores, the items were ranked in each category. Based on the mean score obtained by all the items in each category, the categories were also ranked. Suggested strategies to mitigate the problems faced by chilli growers were collected using an open-ended schedule and the obtained strategies were pooled and ranked according to their frequencies.

Results and discussion

The problems perceived by the respondents were grouped into different categories, given ranks according to their extremities based on their mean scores and displayed in Table 1. In ecological problems, "Delay in onset of monsoon" and "Erratic rainfall" were found as major problems with mean scores of 2.027 and 2.0 respectively. Due to the variations in global climatic conditions and changes in weather patterns, there is a delay in the onset of monsoons which is a prerequisite factor for farming and the erratic rainfall that occurs during the flowering or fruit development stage causes heavy losses to the crop. Hence, these were perceived as major ecological problems by the chilli growers.

The perusal of the above table revealed that "Lack of proper transport facilities" and "Unavailability of quality seed or seedlings" were ranked first and second with mean scores of 2.204 and 2.173 respectively, among the input problems. As the villages were interior, the farmers faced difficulty in transport as the roads were lean and got clogged during rains. They expressed difficulty in bulk transport of the harvested produce. They also articulated that good quality seeds and seedlings were not available in near the vicinity. The result is in line with an earlier study in which it was concluded that the high cost of seed and the lack of quality seed availability are the major technological constraints (1).

Among the economic problems, "High labor wages"

Table 1. Problems as perceived by the chilli growers

Sl. No	ITEM	MEAN SCORE	RANK
I	Ecological Problems	1.926	Seventh
	Soil Fertility and problematic soils	1.846	4
	Occurrence of floods and droughts	1.992	3
	Erratic rainfall	2.000	2
	Delay in onset of monsoon	2.027	1
	Increased incidence of pests and diseases	1.765	5
II	Input Problems	2.085	Fourth
	Unavailability of resistant varieties	2.065	3
	Unavailability of quality seed/seedlings	2.173	2
	Shortage of irrigation facilities	2.050	8
	Unavailability of quality fertilizers in the near vicinity	2.065	3
	Unavailability of plant protection chemicals and herbicides	2.031	9
	Lack of labour during peak period	2.062	5
	Irregular supply of electricity	2.058	6
	Lack of proper transport facilities	2.204	1
	Lack of storage facilities and processing units	2.058	6

III	Economic Problems	2.430	Second
	High cost for seeds and seedlings	2.385	8
	High cost of fertilizers and growth regulators	2.450	5
	High cost of plant protection chemicals and weedicides	2.477	3
	High labour wages	2.496	1
	High transportation cost	2.419	6
	Lack of awareness of financial institutions	2.396	7
	Delayed procedures in loan disbursement	2.469	4
	High-interest rates	2.485	2
	Delayed payments by vendors and traders	2.335	10
	Lack of knowledge on govt. schemes and subsidies	2.385	8
IV	Social Problems	2.075	Fifth
	Lack of cooperativeness	2.104	2
	Lack of local leaders	1.962	3
	Presence of jealousy, competition and envy	1.900	5
	Poor dissemination of information among peer farmers	1.908	4
	Lack of interest in forming FIGs and CIGs	2.504	1
V	Technical Problems	2.275	Third
	Inadequate knowledge on high yielding varieties	2.219	8
	Improper seed treatment techniques	2.269	6
	Lack of adequate training	2.319	1
	Lack of timely technical advice	2.292	2
	Lack of adequate extension contact	2.277	5
	Over-application of fertilizers	2.288	4
	Indiscriminate use of plant protection chemicals	2.292	2
	Lack of knowledge on post-harvest technology	2.238	7
VI	Market Problems	2.538	First
	Lack of nearby regulated markets	2.535	4
	Poor market intelligence	2.554	3
	Lack of remunerative prices	2.577	1
	Fluctuation in market prices	2.523	5
	Exploitation by middle-men	2.562	2
	Lack of export orientation	2.500	7
	Lack of awareness on e-platforms	2.515	6
VII	Personal Problems	2.054	Sixth
	Lack of proper education	2.100	2
	Unwilling to take risk	2.042	3
	Lack of self-confidence	2.238	1
	Lack of innovativeness	1.954	4
	Inability to change traditional methods	1.935	5

and “High-interest rates” were perceived as the major problems, with mean scores of 2.496 and 2.485 respectively. The unavailability of labor during peak periods causes a high demand for labor and due to that, the wage rates were critically high. A study concluded that the majority of the chili growers indicated that the major problem in the adoption of recommended chili production technologies is more labor costs (2, 3). The farmers were going for personal loans from private money lenders to cope with uncertain and unexpected expenditures and so they were forced to pay high-interest rates.

The table depicted that the chili growers expressed “Lack of interest in forming FIGs and CIGs” and “Lack of cooperativeness” as major problems among all the social problems, with mean scores of 2.504 and 2.104 respectively. Forming FIGs and CIGs can effectively enhance market accessibility and resource utilization. However, the respondents informed us that their fellow growers were not interested in forming the groups and that they lacked cooperation with other growers.

The respondents quoted “Lack of adequate train-

ing” as the major technical constraint and occupied first place with a mean score of 2.319. The items “Indiscriminate use of plant protection chemicals” and “Lack of timely technical advice” occupied second place with the same mean score of 2.292. There was only a little importance given by the extension personnel and other agricultural functionaries to horticultural and commercial crops when compared to food crops. So, the number of training being conducted and the frequency of technical advice rendered were meager, resulting in the indiscriminate use of plant protection chemicals and the following of faulty technologies in chilli cultivation. The result is in line with a previous study in which it was concluded that lack of training regarding recommended chili production technology is the major technical problem (2). Inadequate knowledge about the correct quantity of insecticides is the major plant protection problem expressed by chili farmers (3).

In market problems, the respondents perceived “Lack of remunerative prices” with a mean score of 2.577 as the major constraint, followed by “Exploitation by middlemen” with a mean score of 2.562. As chili is not a food crop the MSP allocated by the government is not applicable. Hence, the prices were always fluctuating and were fixed by the traders rather than on demand. Thus, there is a severe lack of remunerative prices for the harvested crop. Non-remunerative prices and market glut are the major marketing problems expressed by chili farmers (3). The farmers too, were reluctant to directly or cooperatively market the harvested produce as it involved transportation and hectic formalities and was exploited by the middlemen involved in the supply chain.

Among the personal problems, “Lack of self-confidence” ranked first with a mean score of 2.238, followed by “Lack of proper education” with a mean score of 2.100. The respondents elucidated that they hesitated to come forward to express their queries, derive information from sources, and feel less confident to try anything new. They expressed that they feel inferior and illustrated themselves as under-educated about current societal needs and standards.

The pigeonhole view of the table makes it clear that among all the different categories of problems, the re-

spondents perceived market and economic problems as the major problems, with mean scores of 2.538 and 2.430 respectively, and were ranked first and second. Technical, input, social, personal, and ecological problems occupied the next 3rd to 7th ranks with mean scores of 2.275, 2.085, 2.075, 2.054 and 1.926 respectively.

The suggestions by the respondents were tabulated, ranked according to the frequencies and presented in Table 2. The open-ended responses were worded, categorized and ranked by their frequencies. A total of eleven strategies were identified to mitigate the extremity of the problems. The majority of the respondents expressed that direct marketing (91.92 %), better remunerative prices (86.92 %), and improving credit facilities through financial institutions (81.54 %) were the best strategies to be implemented to mitigate the level of extreme problems. As market and economic problems topped the list, the majority of the respondents suggested suitable strategies to mitigate them. A study concluded that suggestions to resolve the problems given by chili farmers were the fixation of minimum support prices by the government and eliminating middlemen in marketing. It is suggested that commercial banks and cooperative marketing societies should adopt flexible lending policies (4).

Conclusion

Chilli is an important horticultural crop and is in high demand in the global market. There is ample need to increase the production and productivity of the crop. This study attempted to analyze the extremity of different problems as perceived by chilli growers. It also illuminated the suitable strategies as suggested by the respondents to mitigate the extremity of problems. Hence, by implementing the suggested strategies, the yield and ultimately the socio-economic life of the chilli growers could be improved.

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Table 2. Suggestions given by the chilli growers to mitigate problems

Sl. No	ITEM	FREQUENCY	Per cent	RANK
1	Direct Marketing	239	91.92	I
2	Better Remunerative prices	226	86.92	II
3	Improving credit facilities through financial institutions	212	81.54	III
4	Making available the required inputs in the vicinity	207	79.62	IV
5	Increasing extension activity	201	77.31	V
6	Conducting training programmes	184	70.77	VI
7	Mechanization	166	63.85	VII
8	Providing timely technical advice	159	61.15	VIII
9	Providing storage facilities and processing units	153	58.85	IX
10	Better transport provision	137	52.69	X
11	Subsidies and schemes from the government	125	48.08	XII

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Authors' contributions

KV has done data collection, research analysis and manuscript. BPM guided me in the preparation of the interview schedule, research and drafting of the manuscript.

Compliance with ethical standards

Conflict of interest: The authors declare that they have no competing interests.

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References

- Shaker BRM, Kumar JH, Chaitanya V, Ranjitha PS, Kumar KR, Rao PJM. Constraints faced by chilli farmers in production and marketing of dry chilli in Khammam district of Telangana state. *Journal of Pharmacognosy and Phytochemistry*. 2019;8(5):2143-45.
- Vinod ND, Arun KS, Himadri R, Padmaja. Assessment of constraints encountered by the chilli growers of Khammam district in adoption of recommended chilli production technologies along with Suggestions. *International Journal of Current Microbiology and Applied Sciences*. 2019;8(04):2608-13. <https://doi.org/10.20546/ijcmas.2019.804.303>
- Reddy IV, Wakle PK, Koshti NR, Sonkamble AM. Constraints and suggestions of the chilli farmers in Bhiwapur panchayt samiti of Nagpur district. *Journal of Pharmacognosy and Phytochemistry*. 2017;SP1:625-28.
- Geetha R, Selvarani K. Constraints and suggestions of chilli growers in Virudhunagar district. *International Journal of Advanced Research and Innovative Ideas in Education*. 2017;3(1):2395-4396.
- Sowjanya S, Kumari RV. Constraints faced by the farmers in adoption of integrated crop management in chilli crop in Telangana. *International Journal of Pure and Applied Bioscience*. 2017;5(4):1135-40. <https://doi.org/10.18782/2320-7051.5662>
- Balraj S, Arockiasamy P. Problems of chilli cultivation and marketing in Ramanathapuram district, Tamilnadu. *International Journal of Research and Analytical Reviews*. 2018;5(4):2349-5138.
- Singh M. Socio-economic condition, problems in chilli cultivation and suggestions obtained by chilli growers in Abhanpur block of Raipur district. *Journal of Pharmacognosy and Phytochemistry*. 2020;9(3):326-28.
- Parvinder S, Dhillon BS, Sukhjinderjit S. Assessment of farmers knowledge and their perceive constraints to recommended chilli production practices in Punjab, India. *International Journal of Current Microbiology and Applied Sciences*. 2020;9(8):1423-30. <https://doi.org/10.20546/ijcmas.2020.908.163>
- Rais MN, Mangan T, Sahito JGM, Qureshi NA, Sial MU, Nasir A. An empirical analysis of constraints faced by chilli growers and market intermediaries in production and marketing of chilli in Sindh, Pakistan. *PalArch's Journal of Archaeology of Egypt/ Egyptology*. 2021;18(7):1485-91.
- Dangore UT, Bahekar AK, Datakar SB, Darekar AS. Constraints faced by dry chilli growers in production and marketing of dry chilli in Wardha district of Maharashtra. *Agriculture Update*. 2015;10(3):252-54. <https://doi.org/10.15740/has/au/10.3/252-254>
- Sharma A. Sustainable economic analysis and constraints faced by the Naga King chilli growers in Nagaland. *Indian Journal of Agricultural Research*. 2016;50(3):220-25. <https://doi.org/10.18805/ijare.v50i3.10744>
- Shukla AN, Narain S, Pal SL. Constraints in chill production in Hamirpur, Uttar Pradesh: A case study. *Research and Reviews: Journal of Agriculture and Allied sciences*. 2022;11(4):1-4. <https://doi.org/10.4172/2347226x.11.4.010>
- Aparna KV, Thomas A. constraints faced by farmers in adoption of organic plant protection practices. *Journal of Extension Education*. 2017;29(1):5823-26. <https://doi.org/10.26725/JEE.2017.1.29.5823-5826>
- Das MK, Sarangi KK, Mishra SN, Mohapatra BP, Dash A. Analysis of resource use efficiency and constraints of cotton production in Odisha, India. *Asian Journal of Agricultural Extension, Economics and Sociology*. 2022;40(12):383-89. <https://doi.org/10.9734/ajaees/2022/v40i121806>
- Darandale AA, Bhatt PM, Patel NP. Constraints faced by cotton growers in management of cotton cultivation. *Gujarat Journal of Extension Education*. 2011;22:80-82.